

REMARKS

Applicant respectfully requests reconsideration of this application as amended.

Office Action Rejections Summary

Claims 14-20 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Publication No. 2002/0115002A1 of Bailey et al. ("Bailey").

Claims 10-11 and 13 have been rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 6,705,853 of Nehring ("Nehring").

Claim 12 is rejected under 35 U.S.C. §103(a) as being unpatentable over Nehring as applied to claims 10-11 and 13 above, and further in view of Bailey.

Status of Claims

Claims 10-20 are pending in the application. Claims 15 and 16 have been amended to be rewritten in independent format or to depend from a pending claim. The amended claims are supported by the specification. No claims have been added. No new matter has been added. No claims have been canceled.

Claim Rejections

Claims 14 and 17-20 have been rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Publication No. 2002/0115002A1 of Bailey et al. ("Bailey"). It is submitted that claims 14 and 17-20 are patentable over Bailey. Claim 14 recites:

An apparatus, comprising:
an embossing foil;
a nest disposed below the embossing foil, **the nest having a gas-bearing surface to receive a substrate** having an outer dimension; and
a plurality of piezo actuators disposed near the gas-bearing nest, the plurality of piezo actuators to engage the outer dimension to center the substrate relative to the embossing foil.

(emphasis added)

The Office Action states:

Bailey et al. disclose an apparatus for imprint lithography, comprising an embossing foil or an imprinted layer (16), **a nest of gas bearing to receive a substrate (col. 17, lines 30-43)**, and a plurality of piezo actuators (Fig. 51, 5103; col. 25, lines 17-37).

(Office Action, 12/14/05, page 2)

Applicants disagree and respectfully submit that the Office Action has misunderstood the disclosure of Bailey. At the column 17, lines 30-43 passage cited to by the Office Action, Bailey describes an alternative design for the X-Y stage and not the wafer chuck itself. More specifically, the alternative air bearings embodiment described by Bailey would replace the linkages 1701 and 1702 of the X-stage and Y-stage in order to move the chuck shown on top of the X-Y stage mechanism. (Bailey, col. 17, lines 6-43; Fig. 17). There is no disclosure in Bailey of an air bearing to support a wafer. In regards to wafer support, Bailey discloses mechanical means (i.e., the chuck illustrated in Figure 17) to support its wafer.

In contrast to Bailey, claim 14 includes the limitation of “the nest having a **gas-bearing surface to receive a substrate.**” Therefore, claim 14 is patentable over Bailey. It is submitted that claims 17-20 are also patentable over Bailey because claims 17-20 depend from and, therefore, include the limitations of claim 14.

Claim 15 has been rejected under 35 U.S.C. §102(b) as being anticipated by Bailey. It is submitted that claim 15 is patentable over the cited reference. Claim 15 recites:

An apparatus, comprising:
an embossing foil;
a nest disposed below the embossing foil, the nest having a gas-bearing surface to receive a substrate having an outer dimension; and
a plurality of piezo actuators disposed near the gas-bearing nest, the

plurality of piezo actuators to engage the outer dimension to center the substrate relative to the embossing foil; and
a controller coupled to the plurality of piezo actuators **to sense a motion stoppage of the substrate.**

(emphasis added)

In regards to claim 15, the Office Action states:

In regard to claim 15, Bailey further discloses a control computer (1113) connected to actuators (1112) for controlling the position of the substrate.

(Office Action, 12/14/05, p. 2)

It is respectfully submitted that the Office Action has mischaracterized the claim language and has overlooked explicit terms appearing in claim 15. In particular, the Office Action has not identified where Bailey discloses that its control computer 1113 operates “to sense a motion stoppage of the substrate.” Moreover, it appears that Bailey uses open loop control of its XY stage controller 1112 without any feedback mechanism and, therefore, could not sense motion stoppage of its wafer. Therefore, absent the requisite showing noted above, it is submitted that claim 15 is patentable over Bailey.

Claim 16 has been rejected under 35 U.S.C. §102(b) as being anticipated by Bailey. Claim 16 recites:

An apparatus, comprising:
an embossing foil;
a nest disposed below the embossing foil, the nest having an gas-bearing surface to receive a substrate having an outer dimension; and
a plurality of piezo actuators disposed near the gas-bearing nest, the plurality of piezo actuators to engage the outer dimension to center the substrate relative to the embossing foil, wherein **the plurality of piezo actuators comprise a push rod** to engage the outer dimension of the substrate.

(emphasis added)

In regards to claim 16, the Office Action states:

In regard to claim 16, Bailey discloses a push rod (Fig. 38, 3801).

(Office Action, 12/14/05, p. 2)

It is submitted that component 3801 of Figure 38 of Bailey is not a push rod but, rather a probe. (Bailey, col. 28, lines 29-31). Moreover, such a probe 3801 is part of a gap measurement device and is not part of the piezo actuators 5103 of Bailey.

In contrast to Bailey, claim 16 includes the limitation that “the plurality of piezo actuators comprise a push rod.” Nothing in Bailey discloses such an above noted claim limitation. Therefore, claim 16 is patentable over Bailey.

Claims 10-11 and 13 have been rejected under 35 U.S.C. §102(b) as anticipated by or, in the alternative, under 35 U.S.C. §103(a) as obvious over Nehring. It is submitted that claims 10-11 and 13 are patentable over the cited reference.

Claim 10 recites:

An apparatus, comprising:

means for positioning a substrate near an embossing foil; and
means for checking a **drift** of the substrate **relative to the embossing foil**.

(emphasis added)

The Office Action states:

Nehring discloses a molding apparatus, comprising means or loading assembly (70) for loading or positioning a substrate (66B) into a molding frame and means for checking a drift of the substrate, or photoelectric sag sensors (108) for detecting sag/drift of a substrate panel (66A-B).

In regard to the embossing foil, Nehring’s apparatus is capable for use with an embossing foil, or a perform having a pre-embossed pattern in order to form a product having a desired pattern.

(Office Action, 12/14/05, p. 3)

Applicant respectfully disagrees with the Office Actions assertions regarding Nehring and believe the Office Action has overlooked a limitation appearing in claim 10 of the present application. Nehring teaches six station rotary thermoforming machine including two heating stations 54 and 56 which provide radiant heat to a panel in a carousel assembly, and a molding station 60. The photoelectric sag sensors 108 referred

to by the Office Action are located in heating stations 54 and 56 as illustrated in Figures 1 and 2 of Nehring. It is submitted that the photoelectric sag sensors (108) of Nehring do not check for drift of its panel 66B but, rather, for sagging of one of its panels 66A or 66B in one of the heating stations 54 and 56. The sag sensors 108 determine when the panels are flexible and sufficiently heated by the heating stations. (Nehring, col. 6, lines 23-39; Figs. 1 and 2). Furthermore, the sag sensors 108 are not located in the molding station 60. As such, **the sag in panels is not even detected by sag sensors 108 relative to molds 280 and 290 in molding station 60.**

In contrast to Nehring, claim 10 includes the limitation of “means for checking a **drift of the substrate relative to the embossing foil.**” Nothing in Nehring teaches or suggests the above noted claim limitation.

In addition, the Office Action asserts “Nehring’s apparatus is capable for use with an embossing foil.” Without agreeing with the Office Action’s assertions, the Applicants wish to respectfully point out that although a prior art device “may be capable of being modified to run the way an apparatus is claimed, there must be a suggestion or motivation in the reference to do so.” MPEP 2143.01; *In re Mills*, 916 F.2d 680, 682 (Fed. Cir. 1990). It is respectfully submitted that the Office Action’s assertion that such may be done “in order to form a product having a desired pattern” is not a suggestion or motivation provide in Nehring but, rather, an advantaged culled from hindsight reasoning. It is respectfully submitted that the Office Action must provide the specific understanding or principle within the knowledge of the skilled artisan that would have provided the motivation to modify Nehring in the manner purported by the Office Action. *In re Kotzab*, 217 F.3d 1365, 1371 (Fed. Cir. 2000); MPEP 2143.01. Therefore, for at least the foregoing reasons, it is submitted that claim 10 is patentable over Nehring.

It is submitted that claims 11 and 13 are patentable over Nehring, because claims 11 and 13 depend from and, therefore, include the limitations of claim 10.

Claim 12 is rejected under 35 U.S.C. §103(a) as being unpatentable over Nehring as applied to claims 10-11 and 13 above, and further in view of Bailey. Claim 12 depends from and includes the limitations of claim 10 noted above. It is submitted that Bailey fails to cure the deficiencies noted above in regards to claim 10 and, therefore, claim 12 is patentable over the combination of cited references.

In conclusion, applicants respectfully submit that in view of the arguments and amendments set forth herein, the applicable rejections have been overcome.

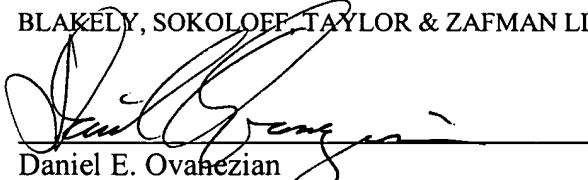
If the Examiner believes a telephone interview would expedite the prosecution of this application, the Examiner is invited to contact Daniel Ovanezian at (408) 720-8300.

If there are any additional charges, please charge our Deposit Account No. 02-2666.

Respectfully submitted,

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Dated: 1/10, 2006


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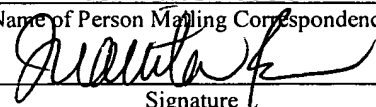
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